

Childhood Immunizations

Definition

The percentage of children 2 years of age who had four diphtheria, tetanus and acellular pertussis (DTaP); three polio (IPV); one measles, mumps and rubella (MMR); three H influenza type B (HiB); three hepatitis B (Hep B), one chicken pox (VZV); four pneumococcal conjugate (PCV); one hepatitis A (Hep A); two or three rotavirus (RV); and two influenza (flu) vaccines by their second birthday. The measure calculates a rate for each vaccine and nine separate combination rates.

Numerator

For MMR, hepatitis B, VZV and hepatitis A, count any of the following:

- Evidence of the antigen or combination vaccine.
- Documented history of the illness.
- A seropositive test result for each antigen.

For DTaP, IPV, HiB pneumococcal conjugate, rotavirus and influenza, count only:

- Evidence of the antigen or combination vaccine.

For combination vaccinations that require more than one antigen (i.e., DTaP and MMR), the organization must find evidence of all the antigens.

DTaP At least four DTaP vaccinations (DTaP Vaccine Administered Value Set), with different dates of service on or before the second birthday. Do not count any vaccination administered prior to 42 days after birth.

IPV At least three IPV vaccinations (Inactivated Polio Vaccine (IPV) Administered Value Set), with different dates of service on or before the second birthday. IPV administered prior to 42 days after birth cannot be counted.

MMR **Any of the following with a date of service on or before the child's second birthday** meet criteria:

- At least one MMR vaccination (Measles, Mumps and Rubella (MMR) Vaccine Administered Value Set).
- At least one measles and rubella vaccination (Measles/Rubella Vaccine Administered Value Set) and at least one mumps vaccination or history of the illness (Mumps Vaccine Administered Value Set; Mumps Value Set) on the same date of service or on different dates of service.
- At least one measles vaccination or history of the illness (Measles Vaccine Administered Value Set; Measles Value Set) and at least one mumps vaccination or history of the illness (Mumps Vaccine Administered Value Set; Mumps Value Set) and at least one rubella vaccination or history of the illness (Rubella Vaccine Administered Value Set; Rubella Value Set) on the same date of service or on different dates of service.

Note: The "Collecting Data for Measures With Multiple Numerator Events"

Guideline (i.e., the 14-day rule) does not apply to MMR.

HiB At least three HiB vaccinations (Haemophilus Influenzae Type B (HiB) Vaccine Administered Value Set), with different dates of service on or before the second birthday.

Do not count any vaccination administered prior to 42 days after birth.

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Hepatitis B Any of the following on or before the child's second birthday meet criteria:

- At least three hepatitis B vaccinations (Hepatitis B Vaccine Administered Value Set), with different dates of service.
- One of the three vaccinations can be a newborn hepatitis B vaccination (Newborn Hepatitis B Vaccine Administered Value Set) during the eight-day period that begins on the date of birth and ends seven days after the date of birth. **For example, if the patient's date of birth is December 1, the newborn hepatitis B vaccination must be on or between December 1 and December 8.**
- History of hepatitis illness (Hepatitis B Value Set).

VZV Either of the following on or before the child's second birthday meets criteria:

- At least one VZV vaccination (Varicella Zoster (VZV) Vaccine Administered Value Set), with the date of service on or before the second birthday.
- History of varicella zoster (e.g., chicken pox) illness (Varicella Zoster Value Set).

Pneumococcal conjugate

At least four pneumococcal conjugate vaccinations (Pneumococcal Conjugate Vaccine Administered Value Set), with different dates of service on or before the second birthday.

Do not count any vaccination administered prior to 42 days after birth.

Hepatitis A Either of the following on or before the child's second birthday meets criteria:

- At least one hepatitis A vaccination (Hepatitis A Vaccine Administered Value Set), with a date of service on or before the second birthday.
- History of hepatitis A illness (Hepatitis A Value Set).

Rotavirus Any of the following on or before the second birthday. Do not count any vaccination administered prior to 42 days after birth.

- At least two doses of the two-dose vaccine (Rotavirus Vaccine (2 Dose Schedule) Administered Value Set) on different dates of service.
- At least three doses of the three-dose vaccine (Rotavirus Vaccine (3 Dose Schedule) Administered Value Set) on different dates of service.
- At least one dose of the two-dose vaccine (Rotavirus Vaccine (2 Dose Schedule) Administered Value Set) **and** at least two doses of the three-dose vaccine (Rotavirus Vaccine (3 Dose Schedule) Administered Value Set), all on different dates of service.

Influenza Two influenza vaccinations (Influenza Vaccine Administered Value Set), with different

dates of service on or before the second birthday. Do not count any vaccination administered prior to 6 months (180 days) after birth.

Combination rates

Calculate the following rates for Combination 2–Combination 10.

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| Combo 5 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | <input checked="" type="checkbox"/> | |
| Combo 6 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | | <input checked="" type="checkbox"/> |
| Combo 7 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | |
| Combo 8 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | <input checked="" type="checkbox"/> |
| Combo 9 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Combo 10 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

Numerator Codes

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| <i>DTaP</i> | At least four DTaP vaccinations, with different dates of service on or before the second birthday. Do not count any vaccination administered prior to 42 days after birth. | CPT: 90698, 90700, 90721, 90723 |
| <i>IPV</i> | At least three IPV vaccinations, with different dates of service on or before the second birthday. IPV administered prior to 42 days after birth cannot be counted | CPT: 90698, 90713, 90723 |
| <i>MMR</i> | Any of the following with a date of service on or before the child's second birthday meet criteria: | |
| | <input type="checkbox"/> At least one MMR vaccination | CPT: 90707, 90710 |
| | <input type="checkbox"/> At least one measles and rubella vaccination <i>and</i> at least one mumps vaccination <i>or</i> history of the illness on the same date of service or on different dates of service. | CPT: 90708 <i>AND</i> CPT: 90704 |
| <i>HiB</i> | At least three HiB vaccinations, with different dates of service on or before the second birthday. Do not count any vaccination administered prior to 42 days after birth. | CPT: 90644, 90645, 90646, 90647, 90648, 90698, 90721, 90748 |
| <i>Hepatitis B</i> | Any of the following on or before the child's second birthday meet criteria: | |
| | <ul style="list-style-type: none"> • At least three hepatitis B vaccinations with different dates of service. <ul style="list-style-type: none"> ○ One of the three vaccinations can be a newborn hepatitis B vaccination during the eight-day period that begins on the date of birth and ends seven | CPT: 90723, 90740, 90744, 90747, 90748 HCPCS: G0010 Newborn Hepatitis B: ICD10: 3E0234Z |

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| | <p>days after the date of birth. For example, if the patient's date of birth is December 1, the newborn hepatitis B vaccination must be on or between December 1 and December 8.</p> | |
| | <ul style="list-style-type: none"> History of hepatitis illness | ICD10: B16.0, B16.1, B16.2, B16.9, B17.0, B18.0, B18.1, B19.10, B19.11, Z22.51 |
| VZV | <p>Either of the following on or before the child's second birthday meets criteria:</p> | |
| | <ul style="list-style-type: none"> At least one VZV vaccination with the date of service on or before the second birthday. | CPT: 90710, 90716 |
| | <ul style="list-style-type: none"> History of varicella zoster (e.g., chicken pox) illness | ICD10: B01.0, B01.11, B01.12, B01.2, B01.81, B01.89, B01.9, B02.0, B02.1, B02.21, B02.22, B02.23, B02.24, B02.29, B02.30, B02.31, B02.32, B02.33, B02.34, B02.39, B02.7, B02.8, B02.9 |
| Hepatitis A | <p>Either of the following on or before the child's second birthday meets criteria:</p> | |
| | <ul style="list-style-type: none"> At least one hepatitis A vaccination with a date of service on or before the second birthday. | CPT: 90633 |
| | <ul style="list-style-type: none"> History of hepatitis A illness | ICD10: B15.0, B15.9 |
| Rotavirus | <p>Any of the following on or before the second birthday. Do not count any vaccination administered prior to 42 days after birth.</p> | |
| | <ul style="list-style-type: none"> At least two doses of the two-dose vaccine on different dates of service | CPT: 90681 |
| | <ul style="list-style-type: none"> At least three doses of the three-dose vaccine on different dates of service. | CPT: 90680 |
| | <ul style="list-style-type: none"> At least one dose of the two-dose vaccine <i>and</i> at least two doses of the three-dose vaccine all on different dates of service. | <p>At least 1 dose of 2 dose vaccine: CPT: 90681 <i>AND</i> At least 2 doses of 3 dose vaccine: CPT: 90680</p> |

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| <i>Influenza</i> | Two influenza vaccinations, with different dates of service on or before the second birthday. Do not count any vaccination administered prior to 6 months (180 days) after birth. | CPT: 90655, 90657, 90661, 90662, 90673, 90685, 90687 |
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Denominator

Children who turn 2 years of age during the measurement year.

Denominator Exclusions

- Exclude children who had a contraindication for a specific vaccine from the denominator for all antigen rates and the combination rates. The denominator for all rates must be the same.
- Exclude contraindicated children only if administrative data do not indicate that the contraindicated immunization was rendered in its entirety.

Any of the following on or before **the patient's second birthday** meet exclusion criteria:

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| <i>Any particular vaccine</i> | Anaphylactic reaction to the vaccine or its components | ICD10: T80.52XA, T80.52XD, T80.52XS |
| <i>DTaP</i> | Encephalopathy <i>WITH</i> a vaccine adverse-effect code | ICD10: G04.32 <i>WITH</i> (Vaccine Causing Adverse Effect Value Set) ICD10: T50.A15A, T50.A15D, T50.A15S |
| <i>MMR, VZV and influenza</i> | Immunodeficiency | ICD10: D80.0, D80.1, D80.2, D80.3, D80.4, D80.5, D80.6, D80.7, D80.8, D80.9, D81.0, D81.1, D81.2, D81.4, D81.6, D81.7, D81.89, D81.9, D82.0, D82.1, D82.2, D82.3, D82.4, D82.8, D82.9, D83.0, D83.1, D83.2, D83.8, D83.9, D84.0, D84.1, D84.8, D84.9, D89.3, D89.810, D89.811, D89.812, D89.813, D89.82, D89.89, D89.9 |
| | HIV | ICD10: B20, Z21, B97.35 |
| | Lymphoreticular cancer, multiple myeloma or leukemia | ICD10: C81.00, C81.01, C81.02, C81.03, C81.04, C81.05, C81.06, C81.07, C81.08, C81.09, C81.10, C81.11, C81.12, C81.13, C81.14, C81.15, C81.16, C81.17, C81.18, C81.19, C81.20, C81.21, C81.22, C81.23, C81.24, C81.25, C81.26, C81.27, C81.28, C81.29, C81.30, C81.31, C81.32, C81.33, C81.34, C81.35, C81.36, C81.37, C81.38, C81.39, C81.40, C81.41, C81.42, C81.43, C81.44, C81.45, C81.46, C81.47, C81.48, C81.49, C81.70, C81.71, C81.72, C81.73, C81.74, C81.75, C81.76, C81.77, C81.78, C81.79, C81.90, C81.91, C81.92, C81.93, C81.94, C81.95, C81.96, C81.97, C81.98, C81.99, C82.00, C82.01, C82.02, C82.03, C82.04, C82.05, C82.06, C82.07, C82.08, C82.09, C82.10, C82.11, C82.12, C82.13, C82.14, C82.15, C82.16, C82.17, C82.18, C82.19, |

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| | | C82.20, C82.21, C82.22, C82.23, C82.24, C82.25, C82.26, C82.27, C82.28, C82.29, C82.30, C82.31, C82.32, C82.33, C82.34, C82.35, C82.36, C82.37, C82.38, C82.39, C82.40, C82.41, C82.42, C82.43, C82.44, C82.45, C82.46, C82.47, C82.48, C82.49, C82.50, C82.51, C82.52, C82.53, C82.54, C82.55, C82.56, C82.57, C82.58, C82.59, C82.60, C82.61, C82.62, C82.63, C82.64, C82.65, C82.66, C82.67, C82.68, C82.69, C82.80, C82.81, C82.82, C82.83, C82.84, C82.85, C82.86, C82.87, C82.88, C82.89, C82.90, C82.91, C82.92, C82.93, C82.94, C82.95, C82.96, C82.97, C82.98, C82.99, C83.00, C83.01, C83.02, C83.03, C83.04, C83.05, C83.06, C83.07, C83.08, C83.09, C83.10, C83.11, C83.12, C83.13, C83.14, C83.15, C83.16, C83.17, C83.18, C83.19, C83.30, C83.31, C83.32, C83.33, C83.34, C83.35, C83.36, C83.37, C83.38, C83.39, C83.50, C83.51, C83.52, C83.53, C83.54, C83.55, C83.56, C83.57, C83.58, C83.59, C83.70, C83.71, C83.72, C83.73, C83.74, C83.75, C83.76, C83.77, C83.78, C83.79, C83.80, C83.81, C83.82, C83.83, C83.84, C83.85, C83.86, C83.87, C83.88, C83.89, C83.90, C83.91, C83.92, C83.93, C83.94, C83.95, C83.96, C83.97, C83.98, C83.99, C84.00, C84.01, C84.02, C84.03, C84.04, C84.05, C84.06, C84.07, C84.08, C84.09, C84.10, C84.11, C84.12, C84.13, C84.14, C84.15, C84.16, C84.17, C84.18, C84.19, C84.40, C84.41, C84.42, C84.43, |
| | Anaphylactic reaction to neomycin. | |
| <i>Rotavirus</i> | Severe combined immunodeficiency | ICD10: D81.0, D81.1, D81.2, D81.9 |
| | History of intussusception | ICD10: K56.1 |
| <i>IPV</i> | Anaphylactic reaction to streptomycin, polymyxin B or neomycin | |
| <i>Hepatitis B</i> | Anaphylactic reaction to common baker's yeast. | |